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[0001] # COMBINATION BASSINET, CHANGING TABLE AND BEDSIDE SLEEPER

[0002] This application is a continuation of U.S. Patent Application No. 10/103,580, filed March 21, 2002, which is incorporated by reference as if fully set forth.

[0003] ## BACKGROUND

[0004] The present invention relates to baby cribs and more particularly to a novel three-in-one crib arrangement capable of functioning as a bassinet, changing table and bedside sleeper.

[0005] ## SUMMARY

[0006] It is not uncommon for families having an infant to provide a separate bassinet, changing table and bedside sleeper. Obviously all of these units occupy space and can make an infant's room quite confining, especially in instances where the infant's room is small. Also, the costs of these units can be prohibitive to many potential customers

[0007] The present invention is characterized by comprising an apparatus in which all the capabilities of bassinet, changing table and bedside sleeper are integrated into one unitary apparatus which is capable of being changed over quite simply and quite readily.

[0008] The apparatus of the present invention comprises a light-weight and yet sturdy and stable skeletal structure which is designed to function as a rocking bassinet when the casters provided thereon are drawn in from the rolling position. The housings for the casters extend well beyond the curved rocking members to limit the

degree of rocking and thereby provide added stability for the structure. The casters, when lowered, allow the structure to be easily rolled and are also capable of being locked in the "down" position when it is desired to prevent the structure from rolling.

[0009] Swingably mounted hoops (i.e. gussets) are provided for adjustably supporting a hood to cover the baby's eyes from light, which swingable hoops are capable of being lowered to gain total access to the surface supporting the infant.

[0010] A section of the top support of the skeletal structure is removable to gain access to the interior of the bedside sleeper when positioned adjacent to parent's bed or when used as a changing table. Nevertheless, a safety bar is provided to act as a barrier to prevent the child from easily rolling out of the bedside sleeper. The sleeper is secured to the parents' bed by safety straps which are placed beneath the mattress and preferably between the mattress and the bedspread to assure safe, secure attachment of the bedside sleeper to the parents' bed.

[0011] The skeletal structure is covered with a lightweight, durable, washable fabric which is designed to provide an aesthetic exterior appearance. The cover includes a side storage bag and larger underside storage area to provide adequate room for diapers, baby clothes and other items such as powders, salves, ointments, creams and the like typically advantageously provided in close proximity to a changing table.

[0012] The skeletal supporting structure is adjustable preferably to at least four different heights to align the structure to the parents' bed when used as bedside sleeper and also when used as either a changing table or bassinet, to accommodate the height of the person attending to the infant.

[0013] The entire structure is extremely light in weight and easy to use and yet quite rugged and stable and is easily and quickly assembled and disassembled for compact storage, transportation and use.

[0014] It is therefore one object of the present invention to provide a novel apparatus capable of functioning as a bassinet, changing table and bedside sleeper requiring very minor adjustment to convert to any one of the above functions.

[0015] Still another object of the present invention is to provide a novel apparatus capable of functioning as a bassinet, changing table and bedside sleeper and which is comprised of a skeletal superstructure which is lightweight and yet strong, rugged and stable and which is covered by a lightweight, sturdy, washable, aesthetically pleasing fabric which, in addition to accommodating the baby, is provided with accessible storage areas respectively located to one side and the underside of the apparatus.

[0016] The above as well as other objects of the present invention will become apparent when reading the accompanying description and drawings in which:

[0017] BRIEF DESCRIPTION OF THE DRAWING(S)

[0018] Figs. 1a and 1b are perspective views respectively showing the skeletal structure of the present invention with the casters in the supporting and concealed position.

[0019] Figs. 1c and 1d respectively show side and end views of the structure of Fig. 1a.

[0020] Fig. 1e draws a more detailed view of one of the wheel assemblies of Figs. 1a and 1b.

[0021] Fig. 1f is a detailed view of one of the brackets of Fig. 1a.

[0022] Fig. 1g is an exploded, detailed view of the removable rod of Fig. 1a and the cooperating brackets

[0023] Fig. 2 is a perspective view showing the skeletal structure of Fig. 1 covered to form the 3-in-1 structure of the present invention.

[0024] Fig. 3 shows a sectional view of the cover structure for covering the skeletal structure of Fig. 1a.

[0025] Fig. 3a is a perspective view of a portion of the cover structure showing the manner in which the cover structure converts from a bassinet to a co-sleeper.

[0026] Fig. 3b is an elevational view showing the manner in which the co-sleeper is held against a parent's bed.

[0027] Fig. 4 is a perspective view of the storage basket shown in Figs. 1c and 1d.

[0028] DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0029] Figs. 1a-1d and 3d show the skeletal structure 10 embodying the principles of the present invention and comprising a pair of inverted, substantially U-shaped, hollow, tubular members 12 and 14 respectively having depending legs 12a-12b, 14a-14b extending downwardly, and a yoke portion 12c, 14c.

[0030] A pair of hollow curved tubular members 16, 18 are each joined to retractable wheel assemblies 20-22 and 24-26 respectively mounted at opposite ends thereof.

[0031] The retractable wheel assemblies, as shown in Fig. 1d are each provided with a recess for receiving an end 16b, 16c of a curved member 16. The tubular member 18 is secured to the wheel assemblies 24, 26 in like fashion to that shown in Fig 1d.

[0032] Fig 1e is a detailed view of one wheel assembly 24 showing the recess 24b for receiving an end of tubular member 18. The retractable wheels shown in Fig 1a are in the "down" position where the skeletal structure is capable of being easily rolled along a surface. The wheels are moved upwardly to a retracted position by operating a toggle button 24c and an operating lever 24d surrounding toggle switch 24c. Toggle button 24c pivots about a vertical axis A and is normally urged into a locked position. Pushing button 24c at the right-hand end unlocks the castor assembly 24a, allowing lever 24d to be rotated in order to rotate caster 24a clockwise about the disc-shaped portion 24i at the upper end of the arm 24j holding caster 24a, disc-shaped portion being swingably mounted within an opening 24b in housing 24l. Lowering the caster 24a is performed by operating the toggle button in a similar manner, however,

the lever 24d is rotated counter-clockwise to lower the caster 24a. When pressure on the right-hand end of toggle button 24c is released, the toggle button returns to the locked condition. Moving the casters 20a, 22a 24a, 26a into their recesses enables the skeletal structure to be rocked by the curved convex central portions 16a, 18a of tubular members 16, 18. Even though the wheels 20a, 22a, 24a and 26a are retracted, the underside of their housings such as 16b, 16c, can engage the surface supporting the skeletal structure, preventing the structure, when it is rocked, from toppling over (see Fig. 1d). The wheel assemblies are provided with conventional locking members, such as the slide switch 24f (not shown in detail for purposes of simplicity), which, when moved in one direction, lock the wheels 22a-26a from rolling when they are in the "down" position. Sliding the switch 24f in the opposite direction unlocks the wheels allowing them to roll freely. The outwardly projecting housings for the wheels provide a wider "footprint" to greatly enhance the stability of the skeletal structure.

[0033] Wheel assemblies 20-26 are further provided with integral, upwardly directed, hollow tubular projections 20g-26g (see Fig. 1e) each adapted to receive the lower end of one of the elongated, hollow, tubular, upright members 28-30 and 32-34, which extend into the hollow projections 20g-26g of assemblies 20-26. The upper ends of tubular members 28-34 each telescope into a lower end of one of the legs 12b-14b, 12a-14a. The legs 12b-14b, 12a-14a are provided with an array of spaced openings, such as, for example, the openings O shown provided on legs 14a, 14b, for purposes of receiving a conventional spring loaded button B provided on an upper end of each tubular member which locks into one of the openings provided on each leg, enabling the tubular members 12 and 14 to be raised (or lowered) to a desired height. The legs of each tubular member 28-34 can be adjusted simply by pressing the buttons B inwardly so that they are cleared of the openings O and moving the members 12 and 14 relative to the members 28-30 and 32-34. As soon as the spring loaded button B aligns with an opening, the spring loaded button B will snap into the opening and lock the associated

leg at a desired height. All of the buttons B for each of the remaining three legs operate in a similar manner.

[0034] Integral hollow projections 29-33 provided on assemblies 22, 20 receive a rod 37 which provides additional structural support. A similar rod 39 extends between similar integral, hollow projections 31-35 to provide similar structural support. Rods 39 and 37 are snap-filled into the projections and extend through sleeves B3, B4 in storage basket 70, shown in Figs. 1c, 1d and 4. The basket 70 is formed of a light-weight, open weave, mesh fabric which enables the contents of the basket to be easily observed through the side panels 76, 78 and end panels 80, 82 The vertically aligned corners C1-C4 are each comprised of strips formed of a suitable, rugged, tight-weave, durable fabric to support the basket. Bottom end strips B1 and B2 are similar to strips C1-C4. Likewise top side strips T1, T2 and top end strips T3, T4 each serve to rigidify the basket to assist in retaining its rectangular, box-like shape. The elongated strips T1-T4, C1-C4 and B1-B4 are preferably formed of more rugged, tightly-woven, rugged, strips of material which are sewn to the mesh material to form a basket.

[0035] The basket 70 makes excellent use of the open region beneath board 56 supported by tubular members 36, 38. The basket 70 is suspended from the skeletal structure by means of four (4) elongated straps S1-S4 arranged in each of the four corners of the basket 70. The straps are each provided with a plurality of spaced, female snap members 84. One of the snaps 84 is snap-fitted with a cooperating male snap member 86 each male snap member being provided at opposite ends of yokes 12c, 14c (see Fig 1c). The female snap member 84 which is snap-fitted to member 86 is chosen so as to keep the basket 70 upright and suitably taut.

[0036] Pairs of tie members 80, 90, 92 and 94 are provided at the upper corners of basket 70 and are tied about the upper portions of legs 12a-12b, 14a-14b to hold the basket taut in the horizontal direction.

[0037] The pair of upright, substantially U-shaped tubular members 36, 38 have

yoke portions 36a, 38a resting upon the yoke portions 12c, 14c and preferably joined thereto, for example, by suitable fasteners, which also secure the board 56 thereto. Standoffs 56a maintain board 56 parallel to yokes 12c and 14c, see Figs. 1c and 1d. Members 36 and 38 are arranged substantially at right angles to yokes 12c and 14c. Member 36 has upwardly directed arms 36b, 36c and member 38 has upwardly directed arms 38b, 38c. Brackets 40 and 42 join the free ends of 44a, 44b of the curved tubular member 44 and first ends 46a, 48a of straight tubular members 46 and 48 to the upright arms 36a and 36b. Similar brackets 50, 52 join the opposite ends 46b, 48b of tubular members 46 and 48 and the free ends 54a, 54b of curved tubular member 54 to the upright arms 38b, 38c. The tubular members 44 and 36b are pivotally mounted to bracket 42 to allow these members to fold into a compact arrangement when disassembled and stored. The brackets 40, 50 and 52 are similar in design and function.

[0038] Rigid board 56 is secured to the yoke portions 36a, 38a of tubular members 36 and 38 by the aforementioned suitable fasteners (not shown) and serves as the base of the bassinet/changing table/bedside sleeper and as a support for a mattress 120 (Fig. 3).

[0039] Brackets 58 and 60 are releasably, mounted to locking projections arranged on the underside of rods 46, 48, For example, Fig 1f shows rod 48, having cooperating projection 48c secured to rod 48 by pin 49. Bracket 60 has a cooperating slot 60a which is slidably mounted upon projection 48c. The free ends of curved gusset members 62, 64 and 66 are pivotally mounted upon the brackets 58, 60 by pin 67. Gusset members 62, 64 and 66 serve as the means for supporting a hood H (see Fig. 2) to shield the infants' eyes from overhead light, as will be more fully described. The brackets 58, 60 which slidably mount to the rods 46, 48 as set forth above, may be removed by sliding the brackets 60 away from the projections, such as projection 48c, enabling the canopy H to be easily removed/replaced. The gussets 62-66 are swingably

mounted to brackets 58-60 to enable hood H to be easily raised and lowered.

[0040] The tubular members 35, 44, 46 & 48 are preferably enclosed in elongated, resilient, foam-type, plastic sleeves, such as sleeve S, shown in Fig 1f, to cushion these rods and reduce injury to an infant or other person engaging these rods.

[0041] Fig. 2 shows the skeletal structure 10 covered with a fabric member 100. Making reference to Fig. 3 as well as Fig. 2, the fabric member 100 is comprised of interior sidewalls, Fig. 2 showing two (2) straight sidewalls 102, 106 and two (2) curved sidewalls 104, 108. The straight sidewalls 102, 106, shown in the sectional view of Fig. 3, as well as curved sidewall 104, have their lower ends joined, preferably by being sewn, to a bottom sheet 110. The sewn portions joining sidewalls 102 and 106 to the bottom sheet are shown at 112 and 114. The two curved sidewalls 104 and 108 are joined in a like manner, being sewn to the outer perimeter of bottom sheet 110.

[0042] Bottom sheet 110 rests upon the upper surface of board 56. A mattress 120 (shown in dotted fashion), is placed upon bottom sheet 110.

[0043] The upper ends of straight sidewalls 102 and 106 respectively rest on rods 46 and 48 and a portion of their free ends are each sewn to an integral skirt portions 118, 116 which skirt portions hang downwardly preferably to a point below the board 56. The short sidewalls are likewise joined to skirt portions 117, 119 in a like manner, as by sewing.

[0044] The surfaces 102a and 106a of the sidewalls 102 and 106 are provided with male-type snap buttons 103a, 103b. The surfaces 118a, 116a are each provided with male-type snap buttons 105a, 105b. The buttons 105a, 105b are arranged to be snap-fitted with buttons 103a, 103b. It should be understood that a plurality of pairs of cooperating snap-buttons 103a, 103b and 105a, 105b are arranged at spaced intervals along the straight sidewalls 102, 106 (as well as curved sidewalls 104 and 108), all of which pairs are snap-fitted together to retain the cover member in place draped over the skeletal frame. If desired, cooperating loop-type and hook-type strips

may be substituted for the buttons without any change in effectiveness.

[0045] The placement of the mattress 120 upon the bottom sheet 110 cooperates with the button pairs to retain the cover member 100 in place.

[0046] The sidewall 106 of cover member 110 is capable of being pulled away from the adjacent curved sidewalls 104, 108. As shown in Fig. 3a, which shows lower portions of the skirt removed to assist in an understanding of Fig. 3a, ends of the straight sidewall 106 are each provided with elongated hook-type strips 107a, 107b which are aligned to be joined with elongated loop-type strips 109a, 109b, shown in dotted fashion, along adjacent ends of the curved sidewalls 104, 108.

[0047] In order to convert the bassinet to a beside co-sleeper, the gussets 62-66 are removed by removing the brackets 58 and 60, brackets 58 and 60 being slidably joined to projections on the rods 46 and 48. The fabric member 100 is provided with elongated slits aligned with the projections on rods 46 and 48 for receiving the brackets 58, 60 and to enable the brackets 58 and 60 to be easily assembled or disassembled from the aforesaid cooperating projection.

[0048] End 48a of rod 48 has a reduced diameter and is removably insertable into opening 42a in bracket 42, as shown in Fig 1g. Opposite end 48b also has a reduced diameter and is longer than end 48a. End 48b is snap-fittingly received in the substantially U-shaped projection 52a at the end of bracket 52. In order to remove rod 48, after removal of bracket 60 and lifting of the skirt portion 108 (see Fig 3a), end 48b is lifted upward in the direction of arrow B and out of the projection 52a. When end 48b is released from the reduced diameter portion 52b of projection 52a, rod 48 is moved in the direction of arrow A to remove end 48a from opening 42a.

[0049] Rod 48 is replaced by inserting end 48a into opening 42a and then lowering end 48b into projection 52a until end 48b moves below the reduced diameter portion 52b, causing end 48b to be snap-fitted into the projection 52a.

[0050] Rod 48 is removed by lifting end 48b upwardly and out of a locking recess

in bracket 52, similar to the locking recess 24h on wheel assembly 24 (see Fig 1e), and sliding rod 48 to the right out of the interior of bracket 42 until its left-hand end clears a receiving opening bracket 52, at which time the rod 48 may be removed. As a safety feature, rod 35 has both of its ends secured to arms 36b, 38a. The distance between rod 35 and board 56 is sufficiently small to prevent an infant's head from becoming wedged between rod 35 and board 56, while providing a barrier to prevent an infant from rolling out of the bassinet, even though rod 48 is removed.

[0051] Prior to removal of rod 48, the skirt portion 116 joined to straight sidewall 106 is lifted to gain access to rod 48.

[0052] After the brackets 58, 60 and rod 48 are removed, the ends of straight sidewall 106 are pulled away from adjacent curved sidewalls 104, 108 causing the cooperating button pairs to be moved apart to allow the straight sidewall 106 to be lowered and draped over rod 35, providing easier access to the interior of the sleeper while still providing a barrier (rod 35) to prevent an infant from rolling out of the beside co-sleeper. The thick, quilted sidewall 106, together with the resilient sleeves (see sleeve S in Fig 1f), acts as a cushion to protect the infant from injury.

[0053] When the skirt portion 106 is pulled over the lower rod 35, the upper flounce portion 106a of skirt portion 106 is preferably aligned with the lower flounce position of the adjacent skirt portions, to enhance the aesthetic appearance even when the rod 48 is removed.

[0054] Fig. 3b shows the manner in which the co-sleeper may be retained against one side of an adult bed B. An elongated pair of straps 130, 131 each have loops 130a, 131a, provided at their free ends. The legs 12a-12b are preferably respectively passed through loops 130a, 131a when the skeletal structure is initially assembled. The straps 130, 131 are joined to a strap, 133, which is preferably passed between the mattress 134 and box spring 135 (or between the mattress 135 and bed frame 137). A flat, rectangular-shaped anchoring member 136 having slot through which the strap

133 is threaded 134, when aligned vertically, bridges across the region between and presses against the mattress and box spring 135 and rests against portions of the mattress and box spring. An adjustable, slidable locking member 136a allows the strap 133 to be tightened, holding the beside sleeper in place against the left-handed side of the bed and holds the anchoring member in place against the right-hand side of the bed. It should be understood that the casters should be in the down position with the casters locked to prevent rolling.

[0055] The loops 130a, 131a of straps 130, 131 shown in Fig. 3b may be released from the strap by conventional clip assemblies 138, 140, to allow the unit to be moved away from the adult bed without disturbing the straps 130, 131 and 133 and the anchoring member 136.

[0056] The sidewall 106 may be placed either over rod 35 or rod 48 when employed as a changing table. The height of the changing table may be raised or lowered to assure a comfortable height for use as a changing table.

[0057] The gussets 62-66 are covered with hood H, which is formed of an aesthetically pleasing fabric, to shade the infant's eyes from bright light and having elongated passageways (not shown) for receiving and concealing the gussets.

[0058] The convertible apparatus may be easily and quickly assembled and disassembled. When disassembled, the apparatus fits into a compact space and is easily transported due to the light-weight and yet rugged materials which are preferably either aluminum or rugged plastic or a combination thereof.

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